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NIXON & VANDERHYE P.C. 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			STEVENS, THOMAS H	
			ART UNIT	PAPER NUMBER
, ,			2123	
		DATE MAILED: 07/12/2006		

Please find below and/or attached an Office communication concerning this application or proceeding.

Paper No(s)/Mail Date \_

6) Other:

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#### **DETAILED ACTION**

- 1. Claims 1-6, 8-13, 15-25, and 27-41 were examined.
- 2. Claims 7, 14, 26, and 33 were cancelled.

### Section I: Final Action

#### Claim Rejections - 35 USC § 103

- 3. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  - 1. Determining the scope and contents of the prior art.
  - 2. Ascertaining the differences between the prior art and the claims at issue.
  - 3. Resolving the level of ordinary skill in the pertinent art.
  - Considering objective evidence present in the application indicating obviousness or nonobviousness.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicants are advised of the obligation under 37 CFR 1.56 to point out the inventors and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, 8, 9, 11-13, 15-18, 20-25,27-29,31-32, 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juniper "Pilot-Scale Evaluation of Australian Thermal Coal for Combustion and Gasification" 1998 in view of by Reed et al. ("Developing Interactive Education Engineering Software for the World Wide Web with Java" ACM, 1998).

Juniper teaches a pilot-scale facilities that are in operation for thermal coal evaluation to evaluate combustion (pg. 42, left column, last paragraph), including simulation of a turbine gas simulator; but fails to teach specified performance criteria with Internet/Web access. Reed et al. teaches a gas installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") simulation system which utilizes the Java language environment software across the Internet (abstract). Both Juniper and Read are analogous art since they both teach gas turbines.

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Therefore at the time of invention, it would have been obvious to one of ordinary skill in the art to utilize the multi-fidelity simulation of Reed in the pilot scale simulation of Juniper because Reed teaches advantageous to remove incompatibilities between computer systems, resulting in an "explosion of accessibility" (Reed: pg. 1, Introduction section, lines 2-3)

Claim 1: A method in a computer system for determining performance of a installed turbine power generating (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45. "HRL coal fired gas turbine simulator") (Reed: abstract), the method comprising: receiving from an operator of the installed turbine an identification of a installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg. 3, left column, paragraph 1); retrieving configuration information for the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator"); determining current performance characteristics of the installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Kita: figure 1 and figure 24 (block 32)) based on the retrieved configuration information; sending to the operator a display page for displaying the determined current performance characteristics (Reed: pg.6, right column, paragraph 4; and pg.7 left column, first paragraph); receiving from the operator an indication of a modification to the configuration of to the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas

turbine simulator"); determining future performance characteristics of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") based on the indicated modification to its configuration; and sending to the operator a display page for displaying the determined future to performance characteristics (Reed: pg. 4, "Conduction the Simulation" section, 1<sup>st</sup> paragraph, lines 6-7 with figure 1).

Claim 2: The method of claim I wherein the determining of the current performance characteristics includes simulating the current performance characteristics based on various readings collected from the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg. 3, left column, Analysis Mathematical Model, lines 18-21).

Claim 3: The method of claim 2 wherein the simulating of the current performance characteristics includes estimating fuel (Reed: pg. 4, figure 1, GUI Hierarchy, Control Volume Dialog-Fuel Source Dialog) flow by repeatedly simulating the current performance characteristics with a varying fuel flow until a desired combustor efficiency is achieved (Reed: pg. 7, left column, second paragraph).

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Claim 4: The method of claim 1 wherein the determining of the current performance characteristics includes adjusting initial performance characteristics based on length of time the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") has been in operation (Reed: pg.7, left column, 2<sup>nd</sup> and 3rd paragraphs).

Claim 5: The method of claim 1 wherein the determining of the current performance characteristics includes measuring the performance characteristics of the installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg.7, left column, 2<sup>nd</sup>).

Claim 6: The method of claim 1wherein the display page includes an indication of average performance characteristics for other installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") s (Reed: pg. 8, figure 7).

Claim 8: The method of claim 1 wherein the display page includes a graph illustrating performance characteristics (Reed: pg. 7, figure 7).

Claim 9: The method of claim 8 wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (Reed: pg. 5, right column, Engine Schematic Layout Window, lines 6-7).

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Claim 12: The method of claim 11 wherein the simulating of the current performance characteristic includes estimating fuel flow by repeatedly simulating the current (Reed: pg. 4, figure 1, GUI Hierarchy, Control Volume Dialog-Fuel Source Dialog) performance characteristic with a varying fuel flow until a desired

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combustor efficiency (Reed: pg. 4, GrControl Volume Icon, Combustor Icon) is achieved.

Claim 13: The method of claim 11 wherein the display page includes an indication of an average for the performance characteristic for other installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") s (Reed: pg. 8, figure 7).

Claim 15: The method of claim 11 wherein the display page includes a graph illustrating performance characteristics (Reed: pg. 8, figure 7).

Claim 16: The method of claim 15 wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (Reed: pg. 5, right column, Engine Schematic Layout Window, lines 6-7).

Claim 17: The method of claim 11 wherein the display page is a web page (Reed: abstract).

Claim 18: The method of claim 11 wherein the display page is sent via the Internet (Reed: abstract).

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Claim 20: A method in a computer system for displaying a performance characteristic of a installed turbine power generating (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator"), the method comprising: sending an identification of a installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") to a manufacture of the turbine; and receiving a display page indicating a performance characteristic of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") relative to the said performance characteristic for other installed turbines power generating (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: abstract).

Claim 21: The method of claim 20 including sending an indication of a modification (Reed: pg.7, right column, Transcript Window, lines 1-4;and figure 6) to the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator"); and receiving a display page indicating the performance characteristic of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") with the indicated modification.

Claim 22: The method of claim 20 wherein the display page includes financial Information elating to possible modifications to the identified installed turbine

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(Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg.7, right column, Transcript Window, lines 1-4; and figure 6).

Claim 23: The method of claim 20 wherein the performance characteristic of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") is displayed as a graph (Reed: pg. 7, figure 7).

Claim 24: The method of claim 23 wherein the graph indicates the performance characteristic for other installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") s (Reed: pg. 7, figure 7).

Claim 25: The method of claim 24 wherein the graph includes an indication of an average performance characteristic for other installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") s (Reed: pg. 7, figure 7).

Claim 27: The method of claim 23 wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (Reed: pg. 5, right column, Engine Schematic Layout Window, lines 6-7).

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Claim 28: A computer-readable medium containing instructions for controlling a computer system to determine a performance characteristic of a installed power generating turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator"), the installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") having a configuration, by a method comprising: simulating a current performance characteristic based on various readings collected from an identified installed turbine power generating (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: abstract); receiving an indication of a modification to the configuration of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg.6, right column, paragraph 4); and determine a future performance characteristic, if the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") based on the indicated modifications to its configuration.

Claim 29: The computer-readable medium of claim 28 wherein the simulating of the current performance characteristic includes estimating fuel flow by repeatedly simulator (Reed: pg. 4, figure 1, GUI Hierarchy, Control Volume Dialog-Fuel Source Dialog) the current performance characteristic by varying fuel flow until a desired combustor efficiency is achieved.

Claim 31: The computer-readable medium of claim 28 including sending a display page for displaying the determined future performance characteristic (Reed: pg. 7, figure 7).

Claim 32: The computer-readable medium of claim 31 wherein the display page includes an indication of an average for the performance characteristic for other installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") s (Reed: pg. 7, figure 7).

Claim 34: The computer-readable medium of claim 31 wherein the display pages includes a graph illustrating the performance characteristics (Reed: pg. 7, figure 7).

Claim 35: The computer-readable medium of claim 34 wherein the graph includes a background with colors that transition from a shade of red to a shade of yellow to a shade of green (Reed: pg. 5, right column, Engine Schematic Layout Window, lines 6-7).

Claim 36: The computer-readable medium of claim 31 wherein the display page is a web page (Reed: abstract).

Claim 37: The computer-readable medium of claim 31 wherein the display page is sent via the Internet (Reed: abstract).

Claim 38: A computer system for determining a performance characteristic of a Installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator"), the installed turbine power generating (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") having a configuration, comprising (Reed: abstract): means for receiving an indication of a modification to the configuration of an identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg.6, right column, paragraph 4); and means for determining a future performance characteristic of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") based on the indicated modifications to its configuration.

Claim 39: The computer system of claim 38 including: means for simulating a current performance characteristic based on various readings collected from the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") (Reed: pg. 7, left column, Graphing Windows, 1<sup>st</sup> paragraph).

Claim 40: The computer system of claim 39 wherein the means for simulating the

current performance characteristic includes means for estimating fuel flow by repeatedly simulating (Reed: pg. 4, figure 1, GUI Hierarchy, Control Volume Dialog-Fuel Source Dialog) the current performance characteristic by varying fuel flow until a desired combustor (Reed: pg. 4, GUI Hierarchy, GrControl Volume lcon, Combustor Icon) efficiency is achieved.

5. Claims 10,19,30 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juniper as modified by Reed as applied to claims 1,11, 28 and 38 above, and further in view of Kita et al., (U.S. Patent 5,886,895 (1999)).

Juniper as modified by Reed teaches most of the instant application except the installed turbine.

Kita et al. teaches calculating optimum operation parameters of a boiler-installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator")-generator (BTG), while taking into account cost (abstract and figure 1 (blocks 71-73)). All three pieces of art are analogous since they all teach turbines.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to utilize the boiler simulation of Kita in the turbine simulation models of Juniper as modified by Reed because Kita teaches a method to for calculating optimum operation parameters of a power generation plant including a plurality of boilers, a plurality of turbines operated by steams generated from the boilers and generators driven by the respective turbines to generate electric power in which the electric power is supplied to electric power loads while the steams generated from the

respective turbines are supplied to steam loads via a plurality of turbine discharge systems (Kita: column 4, 37-46).

Claim 10: The method of claim 1 including receiving financial information (Kika: figure 1, (blocks 71,76)) relating to operation of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") and estimating revenue generated from the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") with the indicated modification (Reed: pg.6, right column, paragraph 4; and pg.7 left column, first paragraph).

Claim 19: The method of claim 11 including receiving financial information (Kika: figure 1, (blocks 71,76)) relating to operation of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") and estimating revenue generated from the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") with the indicated modification (Reed: pg.6, right column, paragraph 4; and pg.7 left column, first paragraph).

Claim 30: The computer-readable medium of claim 28 including receiving financial information (Kika: figure 1, (blocks 71,76)) relating to operation of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45,

"HRL coal fired gas turbine simulator") and estimating revenue generated from the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") with the indicated modification (Reed: pg.6, right column, paragraph 4; and pg.7 left column, first paragraph).

Claim 41: The computer system of claim 38 including means for receiving financial information (Kika: figure 1, (blocks 71,76)) relating to operation of the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") and means for estimating revenue generated from the identified installed turbine (Juniper, pg. 46, "Gas Turbine Simulator" with pg. 45, "HRL coal fired gas turbine simulator") with the indicated modification (Reed: pg.6, right column, paragraph 4; and pg.7 left column, first paragraph).

# Section II: Response to Applicants' Arguments 112 2<sup>nd</sup>

6. Applicants are thanked for responding to this issue. Rejection is withdrawn.

## 103(a)

7. Applicants are thanked for responding to this issue; however, the arguments are non-persuasive to negate the rejection.

Applicants dispute the prima facie reasoning because the invention and the disclosure of the prior art are different. The Office refutes this issue since the applicants are clearly arguing their specification relative to the prior art (applicants' arguments, pg. 11, 5<sup>th</sup> paragraph to pg.13, 1<sup>st</sup> paragraph). The remaining arguments focus on the

limitation of the "installed power-generating turbine". The Office believes that one of ordinary skill in the art would want to model a real-world application in the virtual dimension, i.e., an installed or uninstalled piece of machinery with all the applicable parameters and scenarios to accurately depicted the true nature of said machinery. Rejection stands.

However, the Office has stated (see section  $\mathcal{W}$ ) of allowable subject matter.

#### Section III: Notice Of Allowance

8. After a thorough search, the Office indicated allowable subject matter to applicants' attorney on 7/3/06, by the limitation of claim 20, line 4 to which the applicants have agreed to amend the remaining independent claims of this feature. In order to expedite the prosecution, the Office requested a faxed copy of the amendment claims by 7/6/06 to which the Office has yet to receive. The claims stand rejected until such amends have been received to issue the case.

#### Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

#### Citation to Relevant Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Amaris et al., Frequency Domain Analysis of Flicker Producted by Wind Energy Conversions Systems" 1998 IEEE pg. 1162-1167: teaches simulation of installed turbine networks.

US Patent 6,292763: teaches a method for designing a variable cycle gas flow turbine engine having a maximum airflow and pressure ratio.

#### Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

July 6, 2006

PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINE

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